

Appl. No. : 10/781,574  
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## AMENDMENTS TO THE CLAIMS

Please amend Claims 11-13 as indicated below.

1. (Original) A magnetic read head, comprising an ALD-formed head gap fill layer selected from the group consisting of aluminum oxide, aluminum nitride, mixtures thereof and layered structures thereof.
2. (Original) The magnetic read head of Claim 1 wherein the ALD-formed head gap fill layer has a thickness of between approximately 5 nm and 100 nm.
3. (Original) The magnetic read head of Claim 1 wherein the ALD-formed head gap fill layer has a thickness of between approximately 10 nm and 40 nm.
4. (Original) The magnetic read head of Claim 1 wherein the ALD-formed head gap fill layer has a thickness variation of less than about 2%.
5. (Original) The magnetic read head of Claim 1 wherein the ALD-formed head gap fill layer overlies a magnetic shield layer.
6. (Original) The magnetic read head of Claim 5 wherein the magnetic shield layer comprises nickel-iron.
7. (Original) The magnetic read head of Claim 1 wherein the ALD-formed head gap fill layer overlies a barrier layer.
8. (Original) The magnetic read head of Claim 7 wherein the barrier layer comprises tantalum.
9. (Original) The magnetic read head of Claim 1 comprising a magnetic sensing element selected from the group consisting of GMR (giant magnetoresistive), CMR (colossal magnetoresistive) and TMR (tunneling magnetoresistive) sensors.
10. (Original) The magnetic read head of Claim 1 wherein the magnetic read head comprises a spin valve structure.
11. (Currently Amended) ~~A magnetic read head gap fill material, comprising a structure of The magnetic read head of Claim 1, wherein the head gap fill layer comprises~~ aluminum oxide mixed with a compound with a higher thermal conductivity than aluminum oxide.

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12. (Currently Amended) The ~~gap fill material~~ magnetic read head of Claim 11 wherein the compound with high thermal conductivity is selected from the group consisting of beryllium oxide and boron nitride.

13. (Currently Amended) The ~~gap fill material~~ magnetic read head of Claim 11 wherein the structure comprises alternated layers of aluminum oxide and the compound with a higher thermal conductivity.

14. (Original) A magnetic read head with a head gap fill layer comprising aluminum, oxygen and nitrogen, the head gap fill layer having an as-deposited thickness variation of less than about 2%.

15. (Original) The magnetic read head of Claim 14 wherein the gap fill layer comprises  $\text{Al}_2\text{O}_3$  and  $\text{AlN}$  phases.

16. (Original) The magnetic read head of Claim 14 wherein the gap fill layer comprises  $\text{Al}_2\text{O}_3$  and  $\text{AlN}$  layers.

17. (Original) The magnetic read head of Claim 14 wherein the gap fill layer comprises the ternary phase,  $\text{Al}_x\text{O}_y\text{N}_z$ .